

IMPLEMENTATION PAGE

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) Partial support of travel by five scientists to the Vth International Biophysics Congress, Copenhagen, was covered under this grant in addition to administrative costs. Applications were screened by a Committee of the Assembly of Life Sciences, National Research Council. Report by the official U.S. delegation to the congress and informal reports by attendees are attached.				
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NATIONAL RESEARCH COUNCIL
ASSEMBLY OF LIFE SCIENCES

2101 Constitution Avenue Washington, D. C. 20418

DIVISION OF BIOLOGICAL SCIENCES

January 7, 1976

Lt. Col. W. G. Wisecup
AFOSR
Directorate of Life Sciences
Building 410
Bolling Air Force Base
Washington, D.C. 20332

Dear Colonel Wisecup:

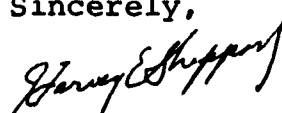
Reference is made to Grant No. AFOSR 75-2838, 23 April 1975, and to Modification No. AFOSR 75-2838 A, June 27, 1975, total \$4,644, for partial support of U.S. participation in the Vth International Biophysics Congress, Copenhagen, August 4-9, 1975.

Attached is a list of U.S. scientists supported under this grant and the amount of travel grant awarded to each. I am also enclosing a copy of the report by the official delegation to the Congress and the VI General Assembly of the International Union for Pure and Applied Biophysics, held in connection with the Congress.

A number of those supported by travel grants under this and other contracts submitted personal reports of benefits received from the Congress. Examples of some of these are attached. If copies of those reports received from individuals supported by this grant are desired, they can be furnished on request.

This will constitute the final report under this grant. Please let me know if any further information is desired.

Sincerely,



Harvey E. Sheppard
Staff Officer

Enclosures

cc: B. L. Kropp

V International Biophysics Congress
Air Force Office of Scientific Research
Grant No. AFOSR 75-2838, and 75-2838 A

Amount of
Travel Grant

- | | | |
|----|--|----------------------------------|
| 1. | Dr. Tara Prasad Das
Professor of Physics
State University of New York
Albany, N.Y. 12222 | \$413.00 |
| 2. | Dr. Samuel Krimm
Professor of Physics and Research Biophysicist
729 Physics-Astronomy Building
University of Michigan
Ann Arbor, Mich. 48104 | 471.00 |
| 3. | Dr. K. N. Leibovic
Professor, Department of Biophysics
State University of New York at Buffalo
4234 Ridge Lea
Amherst, N.Y. 14226 | 439.00 |
| 4. | Dr. William S. Rhode
Assistant Professor
283 Medical Sciences
University of Wisconsin
Madison, Wis. 53706 | <u>Young Scientist</u> 517.00 |
| 5. | Dr. Kenneth J. Rothschild
Research Associate
Harvard-MIT Program in Health
Sciences and Technology
Cambridge, Mass. 02139 | <u>Young Scientist</u> 421.00 |
| 6. | Dr. H. Eugene Stanley
Associate Professor of Physics
Massachusetts Institute of Technology
Room 13-2114
Cambridge, Mass. 02139 | <u>Young Scientist</u> (*421.00) |

TOTAL

\$2,261.00

* Dr. Stanley found that he could not attend the Congress and this grant was returned.



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VALUE OF INTERNATIONAL SCIENTIFIC MEETINGS

A variety of benefits accrue to U.S. scientists and to the scientific community from international scientific meetings. To illustrate these benefits, a selection of comments was compiled from those receiving travel grants to attend the Fifth International Biophysics Congress held in Copenhagen from 3 to 9 August 1975. This Congress included lectures on general topics, invited papers presented in symposia and contributed papers. Contributed papers were presented in "poster sessions" instead of the traditional 10-minute lecture and slide presentations. Most participants favored the poster sessions because they enabled in-depth discussions with the authors.

At international meetings, scientists are able to learn of the most recent foreign work within their specialty and in allied fields.

The specific benefits to my research were clear and numerous. The talks of Rosenfolck and Clark in my own area gave me great new insight into the propagation of the action potential and the concomitant extracellular potential. The entire session on cochlear potentials and microphonics was a revelation to me, showing me an entire new area of quantitative biology. The "general" talks helped bring me up-to-date on the newest developments in the whole field.

...R. S. Eisenberg

My attendance at the Meeting has benefited my own research in two ways. First, I met many European scientists for the first time and now expect fruitful correspondence on matters of mutual interest. Secondly, the symposia and, to a degree, the poster sessions suggested new approaches that I might take in my own work, especially in the area of electrical fluctuation analysis.

...T. Begenisich

The primary advantage of attending European or Asian conferences is the contact with scientists from the communist block countries because their publications appear in press so late and we have little contact with them at meetings in the U.S.

...E. A. Evans

Investigators often have extended discussions or organize ad hoc meetings that clarify scientific issues.

Interest in our research on the purple membrane was high. I met a number of investigators working on this subject for the first time, especially several from a rather large group at the University of Moscow. We had a lively exchange of ideas and finally decided to have a formal discussion session with short presentations. It was held on Wednesday morning from 10:00 to 12:30 and attracted a rather large group of people. The most lively and profitable discussion centered around some new findings on derivatives of bacteriorhodopsin, which appear to give important clues to details of early steps in the photoreaction cycle. It helped to clarify our own thoughts on possible reaction mechanisms. We are now carrying out some experimental work that is based on ideas conceived during the discussion.

...W. Stoeckenius

The specific benefits that I received from the Congress can be summarized in two parts. The first was the intensive discussion with the other speakers in my symposium concerning points of contention in membrane rheology. I believe that all of us now have a better understanding of critical differences in perspective and theses (e.g., "curvature elasticity" effects versus membrane shear rigidity). These discussions continued for a period of three days and we have been left with specific points to be tested by experiment. The second major benefit was the exposure to recent, unpublished experimental data on membrane equations of state in various environments, membrane surface interactions, and multilayer (strata of bilayers) interactions.

...E. A. Evans

The larger international meetings bring together scientists from specialties that otherwise might not communicate.

What makes these Congresses unique is that they bring together mathematically-oriented biological researchers who are interested in a whole range of problems. They allow interactions between people working on vastly different problems but who use techniques (both experimental and conceptual) which have broad applicability. For example, nonlinear differential equations are of crucial importance in studying cochlear function. This Congress provided me the opportunity to discuss these problems with Dr. Jack Cowan,

a theoretical biologist, who is conversant with the most recent advances in nonlinear differential equation theory. The exchange was very valuable both for me in stimulating my thinking about new approaches to my problems and to Dr. Cowan who was made aware of the current state of cochlear questions.

...M. B. Sachs

In a broader context, that of the general application of fluctuation analysis methods to the elucidation of membrane structure and function, I have the distinct impression that previously puzzling observations concerning the structure of bio-membranes were clarified over the duration of the Congress in terms of rather extensive modifications in the (poorly defined) model we all had had in mind for the membrane. Certainly one value of such a broadly attended meeting as this is the possibility of exposing new models generated in one subdiscipline to the scrutiny of specialists in other areas - and indeed to the non specialists who can ask the naive questions and serve as surrogate for the public at large. I believe that other areas could also be sighted in which this phenomenon occurred, but I will just mention this one of membrane structure.

...D. Magde

Results of foreign research can be brought to the attention of U.S. scientists.

An unusual benefit to me and U.S. Science stemming from my attendance at the biophysics meeting was that I learned of important new work of two foreign investigators who I recruited to speak at a meeting on "Cell Motility" to be held at the Cold Spring Harbor Laboratory Sept. 9-14th, of which I am an organizer.

...T. D. Pollard

Scientists are able to obtain advice or information that does not normally appear in scientific literature.

I was able to obtain a great deal of expert advice on an instrument which I am constructing, a magneto-phoresis separator. At this meeting I talked with three foreign scientists who offered many constructive and novel suggestions. But more than this, they provided encouragement to continue a rather difficult project.

...L. C. Cerny

Other discussions opened new avenues of research for me (L. Tilney's work on actin in echinoderm spermatazoa), resulted in modified preparative procedures (F. Barrantes' work with pyrene derivatives), and so on. In short, in a week I was able to accomplish things which would have taken months by mail and was exposed to some new ideas of which I would otherwise have remained unaware.

...S. C. Harvey

Personal discussions often lead to collaborative research activities.

My research has directly benefitted by discovering two groups of workers (in Paris and Copenhagen) who are using the same general approach to membranes as I am. Fortunately our interests are complementary: we will now keep in close touch, and the Paris group and I will apply to NATO for a joint grant.

...L. X. Finegold

As a result of this Congress I have arranged a collaborative effort with J. Funder who will visit my laboratory for an extended period during 1975-76. Furthermore, collaboration between my laboratory and those of the Institute for Biophysics at the University of Copenhagen where J. O. Wieth and J. Brahm work, was strengthened and we have agreed to collaborate on a review article and a visit to my laboratory by J. O. Wieth for the summer of 1976. At the Congress I also learned methods developed in other laboratories which will greatly accelerate my own efforts to obtain pure membrane proteins (S. Bhakdi, Freiburg, Germany).

...R. B. Gunn